

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

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List of Claims:

Claim 1 (Original): A visual display comprising:

a display installation including:

a display panel including a plurality of pixels each having a bit depth; and

an interface in communication with the display panel for receiving a video input

and for driving the display panel during an active burn mode; and

a computer in communication with the display installation for:

determining a primary burn value for each of the pixels for the active burn mode;

identifying a pixel having a low primary burn value indicating that the identified pixel has been burned at a greater degree than a number of other pixels; and

determining a number of pixels each having a primary burn value higher than the low primary burn value indicating that the number of pixels have been burned at a lesser degree than the identified pixel.

Claim 2 (Original): The visual display of claim 1 wherein the computer causes the interface to drive the display panel during a reverse burn mode such that the number of pixels having a primary burn value higher than the low primary burn value are burned to reduce the respective differences between higher primary burn values and the low primary burn value.

Claim 3 (Original): The visual display of claim 1 wherein each of the pixels other than the identified pixel has a difference between the primary burn value thereof and the low primary

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

burn value of the identified pixel; the computer causing the display panel to be driven during a reverse burn mode such that each of the pixels other than the identified pixel is burned to reduce the difference.

Claim 4 (Currently Amended): The visual display of claim 1 wherein the computer determines a secondary burn value for each of the pixels such that when a pixel is driven at the secondary burn value thereof during [[the]] a reverse burn mode, an average value of the pixel for the active and reverse burn modes is approximately equal to one-half of the bit depth of the pixel.

Claim 5 (Original): The visual display of claim 4 wherein the computer determines a plurality of secondary burn values for each of the pixels such that when a pixel is driven at the secondary burn values for a corresponding plurality of reverse burn modes, an average value of the pixel for the active and reverse burn modes is approximately equal to one-half of the bit depth.

Claim 6 (Original): The visual display of claim 4 wherein the interface drives the display panel with the secondary burn values during the reverse burn mode.

Claim 7 (Original): The visual display of claim 4 wherein the interface drives the display panel such that each of the pixels is driven at a plurality of drive values during the active burn mode;

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

the primary burn value of each pixel being approximately equal to an average value of the drive values of the pixel for the active burn mode.

Claim 8 (Original): The visual display of claim 7 wherein the secondary burn value of each pixel is approximately equal to the difference between the bit depth and the average value.

Claim 9 (Original): The visual display of claim 4 wherein each of the pixels has a color set including a plurality of color values each having a bit depth;

the computer determining a primary burn value and a secondary burn value for each of the color values of the color set.

Claim 10 (Original): The visual display of claim 9 wherein:

the plurality of color values includes red, green, and blue, each of which having a bit depth of 256; and

a weighted average of the primary and the secondary burn values for the color set for the active and reverse burn modes is approximately equal to 128-128-128.

Claim 11 (Original): The visual display of claim 1 wherein the computer monitors an image history of the display panel in determining the primary burn values.

Claim 12 (Original): The visual display of claim 1 wherein the display installation includes a plasma display panel.

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

Claim 13 (Original): The visual display of claim 1 further comprising a plurality of the display installations in communication with the computer.

Claim 14 (Original): A method for controlling a display panel including a plurality of pixels each having a bit depth, the method comprising:

- monitoring an image history of the pixels during an active burn mode;
- determining a primary burn value for each of the pixels during the active burn mode;
- determining a secondary burn value for each of the pixels such that when a pixel is driven at the secondary burn value thereof for a reverse burn mode, an average value of the pixel during the active and reverse burn modes is approximately equal to one-half of the bit depth of the pixel.

Claim 15 (Original): The method of claim 14 further comprising:

- generating a conditioning input based on the secondary burn values; and
- providing the conditioning input to an interface to drive the display panel.

Claim 16 (Original): A method for controlling a display panel including a plurality of pixels each having a bit depth, the display panel being driven to display content during an active burn mode, the method comprising:

- monitoring an image history of the pixels during the active burn mode;
- determining a primary burn value for each of the pixels for the active burn mode;
- identifying a pixel having a low primary burn value indicating that the identified pixel has been

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

burned at a greater degree than a number of other pixels; and

determining a number of pixels each having a primary burn value higher than the low primary burn value indicating that the number of pixels have been burned at a lesser degree than the identified pixel.

Claim 17 (Original): The method of claim 16 further comprising causing the display panel to be driven during a reverse burn mode such that the number of pixels having a primary burn value higher than the low primary burn value are burned to reduce the respective differences between higher primary burn values and the low primary burn value.

Claim 18 (Original): A method for controlling a display panel including a plurality of pixels each having a bit depth, the method comprising:

- monitoring an image history of the pixels during an active burn mode;
- identifying a pixel that has been burned at a greater degree than a number of other pixels;
- and
- determining a number of pixels that have been burned at a lesser degree than the identified pixel.

Claim 19 (Original): The method of claim 18 further comprising causing the display panel to be driven during a reverse burn mode such that the number of pixels that have been burned at a lesser degree are burned to reduce the burn difference between each of the number of pixels and the identified pixel.

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

Claim 20 (Cancelled)

Claim 21 (New): A method for use with a display panel having a plurality of pixels, the method comprising:

- determining a first primary value for a first pixel of the plurality of pixels during a primary period of time, based on displaying a video input on the display panel;
- determining a second primary value for a second pixel of the plurality of pixels during the primary period of time, based on displaying the video input on the display panel;
- calculating a first secondary value for the first pixel of the plurality of pixels to be applied during a secondary period of time;
- calculating a second secondary value for the second pixel of the plurality of pixels to be applied during the secondary period of time;
- generating a conditioning input, based on the first secondary value and the second secondary value, to be displayed on the display panel during the secondary period of time;
- displaying the conditioning input on the display panel for the secondary period of time to reduce a difference between a light output of the first pixel and a light output of the second pixel resulting from displaying the video input on the first pixel and the second pixel of the display panel.

Claim 22 (New): The method of claim 21, wherein the primary period of time is equal to the secondary period of time.

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

Claim 23 (New): The method of claim 21, wherein the primary period of time is not equal to the secondary period of time.

Claim 24 (New): The method of claim 21 further comprising:
determining a third primary value for a third pixel of the plurality of pixels during the primary period of time, based on displaying the video input on the display panel;
determining that the third primary value of the third pixel is lower than each of the first primary value of the first pixel and the second primary value of the second pixel;
wherein the first secondary value for the first pixel is based on a difference between the third primary value for the third pixel and the first primary value for the first pixel, and the second secondary value for the second pixel is based on a difference between the third primary value for the third pixel and the second primary value for the second pixel.

Claim 25 (New): The method of claim 21, wherein the first secondary value for the first pixel and the secondary period of time are calculated such that an average value of the first pixel after the displaying the conditioning input is approximately equal to one-half of a bit depth of the first pixel.

Claim 26 (New): The method of claim 25, wherein the second secondary value for the second pixel is calculated such that an average value of the second pixel after the displaying the conditioning input is approximately equal to one-half of a bit depth of the second pixel.

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

Claim 27 (New): The method of claim 21, wherein the determining the first primary value for the first pixel includes monitoring an image history based on the video input during the primary period of time.

Claim 28 (New): The method of claim 27 further comprising storing the image history.

Claim 29 (New): The method of claim 27, wherein the video input is sampled at a predetermined frequency.

Claim 30 (New): The method of claim 27 further comprising:
generating a database of a cumulative average pixel values based on the image history.

Claim 31 (New): The method of claim 30, wherein the database includes a cumulative average value for each of color components of each of the plurality of pixels.

Claim 32 (New): The method of claim 21, wherein the determining the first primary value for the first pixel is further based on manufacturing parameters of the display panel.

Claim 33 (New): The method of claim 21 further comprising:
determining a dynamic region of the display panel displaying the video input;
determining a static region of the display panel displaying the video input;

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

wherein the first pixel and the second pixel are located in the static region.

Claim 34 (New): The method of claim 33, wherein the displaying the conditioning input occurs on the static region of the display panel only.

Claim 35 (New): A device for use with a display panel having a plurality of pixels, the device comprising:

a processor; and

a memory including a software program for execution by the processor to perform:

determining a first primary value for a first pixel of the plurality of pixels during a primary period of time, based on displaying a video input on the display panel;

determining a second primary value for a second pixel of the plurality of pixels during the primary period of time, based on displaying the video input on the display panel;

calculating a first secondary value for the first pixel of the plurality of pixels to be applied during a secondary period of time;

calculating a second secondary value for the second pixel of the plurality of pixels to be applied during the secondary period of time;

generating a conditioning input, based on the first secondary value and the second secondary value, to be displayed on the display panel during the secondary period of time;

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

displaying the conditioning input on the display panel for the secondary period of time to reduce a difference between a light output of the first pixel and a light output of the second pixel resulting from displaying the video input on the first pixel and the second pixel of the display panel.

Claim 36 (New): The device of claim 35, wherein the primary period of time is equal to the secondary period of time.

Claim 37 (New): The device of claim 35, wherein the primary period of time is not equal to the secondary period of time.

Claim 38 (New): The device of claim 35, wherein the memory includes the software program for execution by the processor to perform:

determining a third primary value for a third pixel of the plurality of pixels during the primary period of time, based on displaying the video input on the display panel;

determining that the third primary value of the third pixel is lower than each of the first primary value of the first pixel and the second primary value of the second pixel;

wherein the first secondary value for the first pixel is based on a difference between the third primary value for the third pixel and the first primary value for the first pixel, and the second secondary value for the second pixel is based on a difference between the third primary value for the third pixel and the second primary value for the second pixel.

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

Claim 39 (New): The device of claim 35, wherein the first secondary value for the first pixel and the secondary period of time are calculated such that an average value of the first pixel after the displaying the conditioning input is approximately equal to one-half of a bit depth of the first pixel.

Claim 40 (New): The device of claim 39, wherein the second secondary value for the second pixel is calculated such that an average value of the second pixel after the displaying the conditioning input is approximately equal to one-half of a bit depth of the second pixel.

Claim 41 (New): The device of claim 35, wherein the determining the first primary value for the first pixel includes monitoring an image history based on the video input during the primary period of time.

Claim 42 (New): The device of claim 41, wherein the memory includes the software program for execution by the processor to perform: storing the image history.

Claim 43 (New): The device of claim 41, wherein the video input is sampled at a predetermined frequency.

Claim 44 (New): The device of claim 41, wherein the memory includes the software program for execution by the processor to perform: generating a database of average pixel values based on the image history.

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

Claim 45 (New): The device of claim 44, wherein the database includes an average value for each of color components of each of the plurality of pixels.

Claim 46 (New): The device of claim 35, wherein the determining the first primary value for the first pixel is further based on manufacturing parameters of the display panel.

Claim 47 (New): The device of claim 35, wherein the memory includes the software program for execution by the processor to perform:

determining a dynamic region of the display panel displaying the video input;

determining a static region of the display panel displaying the video input;

wherein the first pixel and the second pixel are located in the static region.

Claim 48 (New): The device of claim 47, wherein the displaying the conditioning input occurs on the static region of the display panel only.

Claim 49 (New): A display apparatus comprising:

a display panel having a plurality of pixels; and

a processor, wherein the processor is configured to:

determine a first primary value for a first pixel of the plurality of pixels

during a primary period of time, based on displaying a video input on the display panel;

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

determine a second primary value for a second pixel of the plurality of pixels during the primary period of time, based on displaying the video input on the display panel;

calculate a first secondary value for the first pixel of the plurality of pixels to be applied during a secondary period of time;

calculate a second secondary value for the second pixel of the plurality of pixels to be applied during the secondary period of time;

generate a conditioning input, based on the first secondary value and the second secondary value, to be displayed on the display panel during the secondary period of time;

display the conditioning input on the display panel for the secondary period of time to reduce a difference between a light output of the first pixel and a light output of the second pixel resulting from displaying the video input on the first pixel and the second pixel of the display panel.

Claim 50 (New): The display apparatus of claim 49 further comprising an interface configured to drive the plurality of pixels using the video input.

Claim 51 (New): The display apparatus of claim 49, wherein the primary period of time is equal to the secondary period of time.

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

Claim 52 (New): The display apparatus of claim 49, wherein the processor is further configured to:

determine a third primary value for a third pixel of the plurality of pixels during the primary period of time, based on displaying the video input on the display panel;

determine that the third primary value of the third pixel is lower than each of the first primary value of the first pixel and the second primary value of the second pixel;

wherein the first secondary value for the first pixel is based on a difference between the third primary value for the third pixel and the first primary value for the first pixel, and the second secondary value for the second pixel is based on a difference between the third primary value for the third pixel and the second primary value for the second pixel.

Claim 53 (New): The display apparatus of claim 49, wherein the first secondary value for the first pixel and the secondary period of time are calculated such that an average value of the first pixel after the displaying the conditioning input is approximately equal to one-half of a bit depth of the first pixel.

Claim 54 (New): The display apparatus of claim 53, wherein the second secondary value for the second pixel is calculated such that an average value of the second pixel after the displaying the conditioning input is approximately equal to one-half of a bit depth of the second pixel.

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

Claim 55 (New): The display apparatus of claim 49, wherein determining the first primary value for the first pixel includes monitoring an image history based on the video input during the primary period of time.

Claim 56 (New): The display apparatus of claim 55, wherein the processor is further configured to store the image history.

Claim 57 (New): The display apparatus of claim 55, wherein the video input is sampled at a predetermined frequency.

Claim 58 (New): The display apparatus of claim 55, wherein the processor is further configured to:

generate a database of a cumulative average pixel values based on the image history.

Claim 59 (New): The display apparatus of claim 58, wherein the database includes a cumulative average value for each of color components of each of the plurality of pixels.

Claim 60 (New): The display apparatus of claim 49, wherein determining the first primary value for the first pixel is further based on manufacturing parameters of the display panel.

Claim 61 (New): The display apparatus of claim 49, wherein the processor is further

Application Serial No.: 10/660,818
Attorney Docket No.: 0270101

configured to:

determine a dynamic region of the display panel displaying the video input;
determine a static region of the display panel displaying the video input;
wherein the first pixel and the second pixel are located in the static region.

Claim 62 (New): The display apparatus of claim 61, wherein the processor displays the conditioning input on the static region of the display panel only.